

CLAIMS

1. An optical recording medium having at least a first recording layer for recording first data and a second recording layer for recording second data relevant to said first data, wherein

said first and second recording layers are layered together, said second data being recorded in a location in said second recording layer in proximity to a location in said first recording layer where the first data relevant to said second recording layer is recorded.

2. The optical recording medium according to claim 1 wherein said second data is recorded within a range accessible on shifting an objective lens of readout means, adapted for reading out said first or second data of said first and second recording layers of said recording medium, from the location of said first recording layer having recorded therein the first data relevant to said second data.

3. The optical recording medium according to claim 1 wherein an intermediate layer is further provided between said first and second recording layers.

4. The optical recording medium according to claim 3 wherein said intermediate layer has a thickness sufficient to optically separate said first and second recording layers from each other.

5. The optical recording medium according to claim 4 also having a first substrate carrying said first recording layer and a second substrate carrying said second recording layer, said first and second substrates being bonded to each other so that said

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first recording layer will face the second recording layer with said intermediate layer in-between.

6. The optical recording medium according to claim 5 wherein said intermediate layer is formed of a light-transmitting adhesive.

7. The optical recording medium according to claim 4 wherein there is further provided a substrate having on its one surface one of said first and second recording layers.

8. The optical recording medium according to claim 1 wherein there are further provided a first substrate carrying said first recording layer and a second substrate carrying said second recording layer, said second substrate being bonded on said first recording layer.

9. The optical recording medium according to claim 4 wherein said first and second substrates are bonded together by a light-transmitting adhesive.

10. An optical recording medium having at least a first recording layer for recording first data and a second recording layer for recording second data making up a sole recording data unit along with said first data, wherein

said first and second recording layers are layered together, said second data being recorded in a location in said second recording layer in proximity to a location in said first recording layer where the first data relevant to said second recording layer is recorded.

11. The optical recording medium according to claim 10 wherein said second data is

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recorded within a range accessible from an objective lens as readout means for reading out said first or second data of said first and second recording layers of said recording medium, by shifting said objective lens from the location of said first recording layer having recorded therein the first data relevant to said second data.

12. The optical recording medium according to claim 10 wherein an intermediate layer is further provided between said first and second recording layers.

13. The optical recording medium according to claim 12 wherein said intermediate layer has a thickness sufficient to optically separate said first and second recording layers from each other.

14. The optical recording medium according to claim 13 also having a first substrate carrying said first recording layer and a second substrate carrying said second recording layer, said first and second substrates being bonded to each other so that said first recording layer will face the second recording layer with said intermediate layer in-between.

15. The optical recording medium according to claim 14 wherein said intermediate layer is formed of a light-transmitting adhesive.

16. The optical recording medium according to claim 13 wherein the optical recording medium is further provided with a substrate having on its one surface one of said first and second recording layers.

17. The optical recording medium according to claim 10 wherein the optical recording medium is further provided with a first substrate carrying said first recording

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layer and a second substrate carrying said second recording layer, said second substrate being bonded on said first recording layer.

18. The optical recording medium according to claim 17 wherein said first and second substrates are bonded together by a light-transmitting adhesive.

19. A reproducing apparatus for an optical recording medium having at least a first recording layer for recording said first data and a second recording layer for recording said second data, said first and second recording layers being layered together, said second data being recorded in a location in said second recording layer in proximity to a location in said first recording layer where the first data relevant to said second recording layer is recorded; said reproducing apparatus comprising:

readout means for reading out first data and second data relevant to said first data from an optical recording medium

reproducing means for generating replay signals based on said first and second data read out from said readout means; and

control means for controlling said readout means and said reproducing means.

20. The reproducing apparatus according to claim 19 wherein said readout means includes an objective lens and wherein said second data is recorded in a range accessible by said objective lens of readout means for reading out said first or second data of said first and second recording layers of said recording medium, by shifting said objective lens from the location of said first recording layer having recorded therein the first data relevant to said second data.

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21. The reproducing apparatus according to claim 19 wherein said control means manages control to alternately read out said first data recorded in said first recording layer of said optical recording medium and said second data recorded in said second recording layer thereof.

22. The reproducing apparatus according to claim 19 wherein said control means manages control to synthesize said first and second data read out from said readout means to output replay signals.

23. The reproducing apparatus according to claim 19 wherein said reproducing means includes a first buffer memory for holding said first data read out and reproduced from said first recording layer by said readout means, a second buffer memory for holding said second data read out and reproduced from said second recording layer by said readout means and a synthesis means for synthesizing the first data read out from said first buffer memory to the second data read out from said second buffer memory.

24. A reproducing apparatus for an optical recording medium having at least a first recording layer for recording said first data and a second recording layer for recording said second data constituting a sole recording data unit along with said first data, said first and second recording layers being mounted in a layered fashion, said second data being recorded in a location in said second recording layer in proximity to a location in said first recording layer where the first data relevant to said second recording layer is recorded, said reproducing apparatus comprising:

readout means for reading out first data and second data from an optical

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recording medium;

reproducing means for generating replay signals based on at least one of said first and second data read out from said readout means; and

control means for controlling said readout means and said reproducing means.

25. The reproducing apparatus according to claim 24 wherein said readout means includes an objective lens and wherein said second data is recorded in a range accessible by said objective lens by shifting the objective lens from the location of said first recording layer having recorded therein the first data relevant to said second data.

26. The reproducing apparatus according to claim 24 wherein said control means controls said reproducing means such as to synthesize said first and second data read out by said read-out means to output replay signals.

27. The reproducing apparatus according to claim 24 wherein said readout means includes a first buffer memory for holding said first data read out by said readout means from said first recording layer and reproduced, a second buffer memory for holding said second data read out by said readout means from said second recording layer and reproduced, and a synthesis unit for synthesizing said first data read out from said first buffer memory to said second data read out from said second buffer memory.

28. A method for reproducing an optical recording medium including at least a first recording layer for recording first data and a second recording layer for recording second data, said first and second recording layers being layered together, said second data being recorded in a location in said second recording layer in proximity to a

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location in said first recording layer where the first data relevant to said second recording layer is recorded; said method comprising

reading out said first and second data from said optical recording medium; and generating replay signals based on said first and second data read out from said

readout means.

29. A method for reproducing an optical recording medium having at least a first recording layer for recording said first data and a second recording layer for recording said second data constituting a sole recording data unit along with said first data, said first and second recording layers being layered together, said second data being recorded in a location in said second recording layer in proximity to a location in said first recording layer where the first data relevant to said second recording layer is recorded, said reproducing method comprising:

reading out first data and second data from an optical recording medium; and generating replay signals based on at least one of said first data and said second

data read out from said readout means.

30. An optical recording medium at least having a first recording layer for recording first data and a second recording layer arranged parallel to said first recording layer for recording second data; wherein

said first and second data are data relevant to each other, one of said first and second data being meaningful data when reproduced alone, the other of said first and second data being data relevant to said one data;

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32. The optical recording medium according to claim 31 wherein said intermediate layer has a thickness sufficient to optically separate said first and second recording layers from each other.

33. The optical recording medium according to claim 32 also having a first substrate carrying said first recording layer and a second substrate carrying said second recording layer, said first and second substrates being bonded to each other so that said first recording layer will face the second recording layer with said intermediate layer in-between.

34. The optical recording medium according to claim 33 wherein said intermediate layer is formed of a light-transmitting adhesive.

35. The optical recording medium according to claim 32 wherein the optical recording medium is further provided with a substrate having on its one surface one of said first and second recording layers.

36. The optical recording medium according to claim 30 wherein the optical recording medium is further provided with a first substrate carrying said first recording layer and a second substrate carrying said second recording layer, said second substrate being bonded to said first recording layer.

37. The optical recording medium according to claim 36 wherein said first and second substrates are bonded together by a light-transmitting adhesive.

38. The optical recording medium according to claim 30 wherein at least one of said first and second data is data corresponding to audio signals.

39. The optical recording medium according to claim 38 wherein the other of said first and second data is data corresponding to the visual information relevant to said one data.

40. The optical recording medium according to claim 39 wherein said other data is data corresponding to the lyric of said one data.

41. The optical recording medium according to claim 39 wherein said other data is data corresponding to an image relevant to said one data.

42. The optical recording medium according to claim 30 wherein said first and second data are data corresponding to multi-channel audio data.

43. The optical recording medium according to claim 42 wherein one of said first and second data is data corresponding to front channel audio signals, the other data being data corresponding to rear channel audio signals.

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